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EXAMINER

CADUGAN, ERICA E

ART UNIT	PAPER NUMBER
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3722

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/688,150	Applicant(s) GLIMPEL ET AL.	
	Examiner Erica E. Cadugan	Art Unit 3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 39-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/7/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-38 in the reply filed on February 15, 2005 is acknowledged.
2. Claims 39-41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 15, 2005.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. For example, it is noted that the specification, on page 2, references DE 19958636, which is not cited.

Drawings

4. Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (per page 10, lines 7-8, at least). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified

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and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the embodiment of each of claims 1 and 20 (and 5 and 24) wherein the at least one cutting element is attached or attachable “between at least two fastening elements”; both “positive” and “non-positive” attachment as set forth in claims 1 and 20; the “separation” and “released condition” wherein the fastening element is still connected to the carrier piece of claims 3 and 22; the fastening element (4) that “may be screwed into the carrier piece” of claims 10 and 29; the “circular segment recess”, the “whistle notch”, and the “Weldon”, all from claims 11 and 30; the connection between two carrier piece elements being made by “a screw connection” as set forth in claims 15 and 34 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet”

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification as originally filed does not appear to provide proper antecedent basis for:

a fastening element (4) that “may be screwed into the carrier piece” (2) as set forth in claims 10 and 29, for example;

the “screw connection” between the two carrier piece elements” of claims 15 and 34, for example.

Claim Objections

7. Claims 6, 19, and 25 and 38 are objected to because of the following informalities: in line 2 of each of claims 6 and 25, it appears that --is-- should be inserted prior to “essentially prismatic”; in claims 19 and 38, it appears that applicant may mean “projections” instead of “projects”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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9. Claims 1-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-38 are replete with instances that do not particularly point out and distinctly claim the subject matter of applicant's invention. Examples of these instances are listed below, but these instances are not limited to the listed examples. Applicant is advised to closely review the claims for other occurrences.

Examiner notes that the language of claims 2-19 appears to identically correspond to the language of claims 21-38, respectively, and thus, if there is an issue with respect to 35 USC 112, second paragraph in claim 2, for example, Applicant should also look to claim 21 to correct the same issue.

The claims are replete with instances where a limitation that has already been recited in a claim is again set forth later in the claim(s) in a manner such that it is unclear whether the later recitation is meant to be the same as or different from the original recitation. In other words, there are several instances in the claims wherein a limitation is recited, and then later in that claim or in a claim that depends therefrom, another recitation of the limitation is made either with no modifying article at all, or with an indefinite modifying article such as "a" or "an". For example, in claim 1, line 3, "at least one cutting element" is recited. In claim 1, line 7, "at least one cutting element" is also recited. Thus, it is unclear whether the "at least one cutting element" in line 7 is the same as or different from the earlier recitation in line 3. If so, Examiner suggests utilizing language in line 7 such as "the" or "said" prior to "at least one cutting element", or "at least one of the cutting element or the cutting elements" in claim 7.

There are several positively recited limitations that lack sufficient antecedent bases in the claims. A few examples of this are: “the outside” in claim 2 (the outside of what?); “the connecting means” in claims 10 and 29; “the cutting element” in at least claim 11 (previously “at least ...”); “the fastening element” in at least claim 11 (previously “at least one...”); “the edge area” in claim 11 (no previous edge area set forth, nor is it clear as claimed what the edge area is of, i.e., edge area of what?); . This is not meant to be an all-inclusive list of such occurrences. Applicant is required to review the claims and correct any other such occurrences of limitations lacking sufficient antecedent basis.

In claim 2, line 3, it is unclear as claimed to what structure or element “it” refers.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by “such as” and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present case, there are several such instances, for example, claim 3 recites the broad recitation “connected”, and the claim also recites “in particular via connecting means” which is the narrower statement of the range/limitation. There

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are several such instances, especially involving the phrases “in particular” or “preferably”, throughout the claims (including in independent claim 20 as well as many dependent claims).

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-14, 16, 19-33, 35, and 38, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,112,162 to Hartford et al.

Hartford teaches a cutter (which happens to be a “thread milling cutter” as per at least the title of the invention, though it is noted that the present claims do not require that the cutter be a “thread milling cutter” since that is an alternative limitation, see present claims 1 and 20). The cutter 10 includes a “carrier piece” 14 that is rotatable about an axis of rotation via milling machine 11 (see Figure 1). A plurality of “cutting elements” 20 are releasably attached to the “carrier piece” 14 via “fastening elements” 21 that are releasably attached to the “carrier piece” 14 via “connecting means” (re claim 20) or screws 22 (see Figure 7). Note that the “cutting elements” 20 themselves have no holes for attachment (re claim 1), and that the cutting elements 20 are attached to the carrier piece between the carrier piece 14 and a fastening element 21 (see Figure 7).

Re claims 1 and 20 and the “positive” and/or “non-positive” attachment of the cutting element, it is noted that it would appear that by claiming that the attachment is either positive or non-positive, all bases are covered, i.e., regardless of how the attachment of the cutting element

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of the prior art occurs, be it positively or non-positively, this limitation of the claim is met because the Hartford reference inherently teaches at least one or the other.

Re claim 20, note also that the fastening elements 21 and “connecting means” 22 are located “outside” the cutting elements 20 in that they are external to the cutting elements’ outer surfaces. Also re claim 20, note that neither fastening elements 21 nor “connecting means” 22 “penetrate” the cutting elements 20, nor are 21 and 22 “surrounded by” the cutting elements 20.

Re claim 2, note that the fastening elements 21, when screws 22 are tightened, serve to press or fix the cutting elements against the carrier element 14 (see at least Figure 5), and that loosening the screws 22 enables the cutting elements 20 to be removed from the carrier piece 14 (see at least Figure 7).

Re claim 3, it is noted that the screws 22 can inherently be loosened without being removed from the carrier element 14, and thus, in the loosened or “released condition” of the screws 22, the “fastening elements” 21 also possess the capability of being loosened without being removed from the carrier piece. Furthermore, the fastening elements 21, when the screws are loosened, possess the capability of remaining in contact with the carrier piece while at the same time having a “separation” therefrom (between at least the radially innermost face of the elements 21 and the carrier element) by merely sliding the fastening elements 21 slightly radially outwardly (see Figures 5 and 7, for example). (It is also noted that no such separation capability is required by claim 3, noting that claim 3 sets forth “in particular” with separation.)

Re claim 4, note that removing the screws 21 enables the fastening elements 21 to be removed from the carrier piece 14 (see Figure 7).

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Re claim 5, note that the cutting elements 20 are clamped between the carrier piece 14 and a fastening element 21 (see at least Figures 3, 5, and 7).

Re claim 6, note that the fastening elements 21 serve as wedges to clamp the cutting elements 20 in place (see Figures 3, 5 and 7, for example).

Regarding claim 7, see angle 33, for example (see Figure 3 and col. 4, lines 27-29, for example).

Re claim 8, note that the fastening elements 21, as broadly claimed, “grip around” the cutting elements 20 in the “radial direction” and also push against the carrier element 14 (see Figures 3-4, for example).

Re claim 9, note that the cutting elements 20 have “bearing surfaces” in the axial (extending in the vertical direction as viewed in Figure 7 and into the paper as viewed in Figure 4), radial (extending transversely to the rotation axis, see Figure 4), and “circumferential” (via the contact of pins 28 with the cutter elements 20, which pins 28 form part of the “carrier element” 14 since they are fixed relative thereto during operation, see Figures 5, 7, and col. 4, lines 11-26, for example). Note also that claim 9, as broadly set forth, does not require all three of these bearing surfaces, but rather, since they are all claimed in the alternative, only requires one of them.

Re claim 10, as best understood, Hartford teaches the threaded section of the fastening element in the form of the threads on the screws 22.

Re claim 11, note that the cutting elements 20 contact the fastening elements 21 at a recessed portion including shoulder 32 (see Figures 4, 5, and 7).

Re claim 12, as broadly claimed, Hartford's carrier piece includes two "carrier piece elements" in the form of shank 14 and an opposite end 15 (see Figure 7, also col. 3, lines 27-28, for example). Note that Hartford also teaches the apparently optional limitation that the two elements 14, 15 are "essentially rotation symmetrical" (see Figure 7, for example).

Re claim 13, note that carrier piece element 15 receives and holds the cutting elements 20 (Figure 7).

Re claim 14, note that as broadly claimed, any two portions of the carrier element (i.e., the holder as a whole as viewed in Figure 7, for example) can be considered the "two carrier piece elements". That being said, note that it can thus be considered that the radial and circumferential bearing surfaces belong to a portion of the holder forming a first "carrier piece element", and the axial bearing surface belongs to a portion of the holder forming a further "carrier piece element", as broadly claimed.

Re claim 16, it is noted that the "hollow clamping cone" limitation does not appear to be a required limitation for the claim to be met, and that the clamping area (located at the upper portion of the tool in the vicinity of the reference number 14 in Figure 2) which is clamped within the tool spindle of the milling machine (Figure 1) is considered to be a "quick action system" as broadly claimed in that there appears to be nothing preventing the spindle from "quickly" gripping that area of the tool.

Re claim 19, note that each cutting element 20 has a number of teeth, each of which can be considered to form a "cutting area". Re one of the alternative limitations of claim 19 (i.e., not required, since claim 19 is already met by having at least two "cutting areas"), note that these teeth "project" from the cutting element, and are also spaced from one another axially.

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12. Claims 1-14, 16-17, 19-33, 35-36, and 38, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,873,684 to Flolo.

Flolo teaches a thread milling cutter 8 including a rotatable tool holder or “carrier piece” 10 having cutting elements 24 releasably attached thereto via “fastening elements” including dowel pin 30 and set screws 34, 35 (see Figures 1-2 and col. 5, lines 36-54). Note that there is no hole in the cutting inserts 24.

Re claims 1 and 20 and the “positive” and/or “non-positive” attachment of the cutting element, it is noted that it would appear that by claiming that the attachment is either positive or non-positive, all bases are covered, i.e., regardless of how the attachment of the cutting element of the prior art occurs, be it positively or non-positively, this limitation of the claim is met because the Flolo reference inherently teaches at least one or the other.

Note also that the cutting inserts 24 are attached to the tool holder between the tool holder 10 and the fastening elements.

Re claim 20, note also that the dowel pin 30 can be considered the “fastening element” and the set screws 34, 35 can be considered the claimed “connecting means”, or 30 and 34 the “fastening elements” and 35 the “connecting means”, for example. (Note that the claim does not require the “screw connection”.) Note also that the fastening element and connecting means are located “outside” the cutting elements 24 in that they are external to the cutting elements’ outer surfaces. Also re claim 20, note that neither the fastening elements nor the “connecting means” “penetrate” the cutting elements 24, nor are 30, 34, and 35 “surrounded by” the cutting elements 24 (see Figures 1-2, for example).

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Re claim 3, for example, note that the set screws 34, 35 can be loosened without being removed from the tool holder.

Re claim 6, note that the elements 34, 35, and 30, as broadly claimed, “exert a clamping wedge action on the cutting element” (see Figures 1-2).

Re claim 7, note that the surface of the cutting inserts 24 that contacts the clamping structures 30, 34, 35, is at an angle to the radial direction (see Figure 2).

Re claim 8, as broadly claimed, the fastening element 30 “grips around” the cutting element 24 in the radial direction (see Figure 2) and pushes against the carrier element (see Fig. 2).

Re claim 9, note that the carrier piece 10 has at least a bearing surface in the axial direction 52 (which surface also extends in the generally radial direction, at a slight angle thereto).

Re claim 11, note the presence of recess 26, which contacts “fastening element” 30.

Re claim 12, note that the tool holder or “carrier piece” 10 has, for example, “carrier piece elements” 14 and 18 (Figure 1).

Re claim 14, note that surface 52 can be considered an axial bearing surface, 54 a radial bearing surface, and 62 a cylindrical bearing surface. Also note that as broadly claimed, any two portions of the carrier element (i.e., the holder as a whole as viewed in Figure 1, for example) can be considered the “two carrier piece elements”. That being said, note that it can thus be considered that the radial and circumferential bearing surfaces belong to a portion of the holder forming a first “carrier piece element”, and the axial bearing surface belongs to a portion of the holder forming a further “carrier piece element”, as broadly claimed.

Re claim 16, it is noted that the “hollow clamping cone” limitation does not appear to be a required limitation for the claim to be met, and that the clamping area (located at the right portion of the tool in the vicinity of the reference number 14 in Figure 1) which is clamped within the tool spindle is considered to be a “quick action system” as broadly claimed in that there appears to be nothing preventing the spindle from “quickly” gripping that area of the tool.

Re claim 17, Flolo, note that the carrier piece 10 includes a plurality of coolant ports 38, 39 (Figure 1, col. 5, lines 10-17).

Re claim 19, note that each cutting element 24 has a number of teeth, each of which can be considered to form a “cutting area”. Re one of the alternative limitations of claim 19 (i.e., not required, since claim 19 is already met by having at least two “cutting areas”), note that these teeth “project” from the cutting element, and are also spaced from one another axially.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 15 and 34, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Hartford or Flolo as applied to claims 1, 12, 20, and 31 above, and further in view of U.S. Pat. No. 5,114,286 to Calkins, for example.

Either of Hartford or Flolo teaches all aspects of the claimed invention as described above, but does not teach that the carrier piece element “has a cylindrical section that may be

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located or is located in a hole in the other piece element” (note that this limitation is all that is required to meet claim 15.

However, Calkins teaches a two-piece tool arrangement including a male portion that fits into a female portion and is affixed thereto via a screw connection (see Figure 1, for example), again noting that the screw connection of claim 15, as set forth in the claim, is not a required limitation.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the carrier piece taught by either of Hartford or Flolo into two pieces connected as taught by Calkins for the purpose of enabling the threading tool taught by either of Hartford or Flolo to mill threads into deeper holes by stiffening the tool and reducing flex thereof (see Calkins, at least col. 11, lines 9-41, for example).

15. Claims 17-18 and 36-37, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,112,162 to Hartford et al. as applied to claims 1 and 20 above, and further in view of U.S. Pat. No. 5,873,684 to Flolo.

Hartford teaches all aspects of the claimed invention as described above. Additionally, re claim 18, note that there is a space, considered an “undercut” as broadly claimed, between the radially innermost part of the cutter insert 20 and the carrier element, which space is located between the radial bearing surface and the circumferential bearing surface (see Figures 4 and 7).

However, Hartford does not teach the supply holes and/or supply grooves that may be supplied with cutting oil (claim 17).

Flolo teaches a rotatable thread milling cutting tool having a carrier piece to which cutting elements 24 are affixed (Figure 1). The carrier piece includes a plurality of coolant ports 38, 39.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have supplied the plurality of coolant ports taught by Flolo to the carrier piece taught by Hartford for the purpose of extending the life of the cutter by cooling it during operation, or the purpose of having a means to wash or flush away the cut chips, which are benefits that are well-known and understood by those having ordinary skill in the art.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

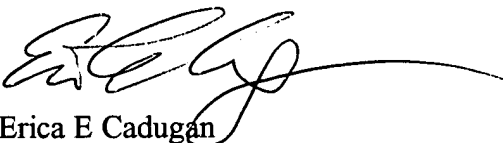
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E. Cadugan whose telephone number is (571) 272-4474. The examiner can normally be reached on M-F, 6:30 a.m. to 4:00 p.m., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer D. Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erica E Cadugan
Primary Examiner
Art Unit 3722

eec
March 2, 2006